UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/591,107	05/22/2008	Enhui Liu	U 016447-2	6199

140 7590 07/26/2010

LADAS & PARRY LLP
26 WEST 61ST STREET
NEW YORK, NY 10023

EXAMINER	
BEDNASH, JOSEPH A	

ART UNIT	PAPER NUMBER
2461	

NOTIFICATION DATE	DELIVERY MODE
07/26/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

nyuspatactions@ladas.com

Office Action Summary	Application No.	Applicant(s)	
	10/591,107	LIU, ENHUI	
	Examiner	Art Unit	
	Joey Bednash	2461	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 May 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 October 2006* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. Figures 1-5 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to because Fig. 3 is partly illegible. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet"

pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 1-8 and 15-18 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The subject claims are directed towards a resource and admission control subsystem in a next generation network. The claim limitations are directed towards functions and functional interfaces of the subsystem. These functions are defined as existing within the service layer and transport layer of the protocol stack. As such, it is examiner's position that the functions and interfaces between the claimed functions can be implemented solely as software per se. Software is non-statutory; therefore the claims are rejected as non-statutory.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-8 and 15-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The rejected claims depend from claim 1 which has several issues. In line 4 of claim 1, the claim calls out "an application service media flow" and on line 11 the claim includes "a cross-operator application service media flow". In lines 31 and 41 of the claim, reference is made to "the media flow." It is unclear on which media flow the Access and Interconnect Border Gateway Functions (A-BGF and I-BGF respectively) are performing the claimed functions.

In lines 2-3 and 9-10 of claim 1, the claim calls out "a resource reservation request" It is unclear if these are the same or different resource reservation requests. If they are the same, the second instance of "resource reservation request" should be preceded by "the" and if they are different resource reservation requests, they should be differentiated by terms such as "a first" and "a second" to denote that they are two distinct requests.

Claim 1 is directed towards "a next generation network (lines 1-2)." The claim includes terms: "the network (lines 5 and 12)" It is unclear if this network is the aforementioned next generation network. The claim also includes reference to "the access network and the core network" in line 8. It is unclear how these relate to the "next generation network" and "the network." Furthermore, the claim includes "the transport layer of the network (lines 4-5)." It is unclear if the transport layer is of the next generation network, the access network or the core network. Similarly, the claim

includes "the transport layer of the network" in lines 11-12. It is unclear if this is the same transport layer of lines 4-5, or a different transport layer. Furthermore, it is unclear how "the network" in line 12 relates to "the core networks" in line 15 and the aforementioned "the network (line 5)," "the next generation network (lines 1-2)," "the access network (line 8)," and "the core network (line 8)." Also, lines 25-26 include "the access network and the core network" while lines 36-37 include "the core networks." Lines 23 and 34 include "the transport layer." While it is understood that "the transport layer" is not a physical entity but actually a function that provides for interconnection between various networks, the various uses of the term "the transport layer" and the different networks leads to lack of clarity with respect to "the transport layer" being one transport layer across "the next generation network," "the network," "the access network," "the core network" and "the core networks" or if the claim is directed towards multiple transport layers because it is unclear how "the next generation network," "the network," "the access network," "the core network" and "the core networks" are related to one another.

In line 21 of claim 1, the acronym "NGN" is introduced in the claim. As a general rule, the use of acronyms is accepted; however, the acronym should be introduced at the first instance of the terms it is intended to represent. For example, "[a] resource and admission control subsystem in a next generation network (NGN)..."

Furthermore, line 7 of claim 2 includes "the resource reservation request from the A-ACF." There is lack of antecedent basis in the claim for this resource reservation request because claim 1 includes A-ACF receiving a resource reservation request from

an application service media flow. It is unclear if this is a separate resource reservation request or the request received by the A-ACF function and forwarded to the A-RCF function. Similarly, line 17 includes "the resource reservation request from the A-ACF or I-ACF. There is no antecedent basis in the claim for this feature and the claim is indefinite with respect to the various resource reservation requests.

Moreover, lines 10-11 and 19 of claim 2 include a feature of "the check result of transport resource availability." It is unclear if these are the same check result or different check results. The claimed "check results" lack antecedent basis in the claims. Lines 31-32 include "the check result of transport resource availability in the access network." There is lack of antecedent basis in the claim for this check result. Lines 34-35 include "the check result of transport resource availability in the core network." There is lack of antecedent basis in the claim for this check result.

Claim 3 is written in independent form from claim 1. There is lack of antecedent basis in claim 3 for the following: "the C-RCF," "the transport resource availability check request" and "the check result of transport availability in the access network."

Regarding claim 6, the acronyms "ACF" and "RCF" lack antecedent basis in the claims. Furthermore, definition of ACF and RCF is required.

Regarding claim 7, there is lack of antecedent basis in the claims fro the acronym "RCF" which again needs definition.

Regarding claim 8, the acronyms "ACF" and "RCF" lack antecedent basis in the claims. Furthermore, definition of ACF and RCF is required.

Regarding claim 15, there is lack of antecedent basis in the claims for "the transport resource availability check request."

Regarding claim 16, the acronyms "ACF" and "RCF" lack antecedent basis in the claims. Furthermore, definition of ACF and RCF is required.

Regarding claim 17, there is lack of antecedent basis in the claims fro the acronym "RCF" which again needs definition.

Regarding claim 18, the acronyms "ACF" and "RCF" lack antecedent basis in the claims. Furthermore, definition of ACF and RCF is required.

3. Claims 9-14 and 19-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 9 includes the term "the check result of transport resource availability in the access network **(ll. 11-12)**." There is lack of antecedent basis in the claim for this check result. Furthermore, there is lack of antecedent basis in the claim for "the check result of transport resource availability in the core network **(ll. 17-18)**." The claim includes "the check result" in lines 12 and 18. It is unclear to which check result these terms refer. Lines 22-23 of claim 9 include "the check result of transport resource availability." It is unclear if this is with reference to the resource availability in the access network or the core network. Line 24 of claim 9 includes "the control parameter." It appears this is intended to be "parameters." It is unclear if the parameter is referring to the "admission control parameters" from line 23.

Claim 12 includes "a resource reservation request" in line 4. It is unclear if this request is the same or a different resource reservation request than the resource reservation request in claim 9 line 3. Furthermore, claim 12 includes "the resource reservation request" in line 5. It is unclear if this is referring to the request called out in line 3 of claim 9 or line 4 of claim 12. It is unclear which resource reservation request is referenced in line 9 of claim 12. There is lack of antecedent basis for "the check result of transport resource availability between operators **(lines 15 16)**." Lines 17-18 of claim 12 includes "the control parameter." It appears this is intended to be "parameters." It is unclear if the parameter is referring to the "admission control parameters" from line 16-17. It is unclear to which resource reservation request "the resource reservation request" in lines 20 and 21 of claim 12 refers. It is unclear to which admission control decision result "the admission control decision result" in line 23 of claim 12 is referring. It is unclear to which admission control parameters "the admission control parameters" in lines 23 and 24 is referring.

Regarding claim 13, there is lack of antecedent basis for "the process of creating," "the application service session" and "the application service control function." There is lack of antecedent basis for multiple "A-ACFs at initiating end and destination end" for the claim to this point has indicated one A-ACF function. There is lack of antecedent basis for "the application service session process" and "the original resource reservation and admission control parameters."

Regarding claim 14, there is lack of antecedent basis for "the process of creating," "the IBCF" and "the session of cross-operator application service." It is

unclear if "a resource reservation request" of line 6 is associated or separate from previously claimed resource reservation requests of claim 14. It is unclear if "a resource release request" of line 13 is related to or independent of "a resource release request" in claim 13 from which claim 14 depends.

Regarding claim 19, there is lack of antecedent basis for "the process of creating," "the application service session" and "the application service control function." There is lack of antecedent basis for multiple "A-ACFs at initiating end and destination end" for the claim to this point has indicated one A-ACF function. There is lack of antecedent basis for "the application service session process" and "the original resource reservation and admission control parameters."

Regarding claim 20, there is lack of antecedent basis for "the process of creating," "the IBCF" and "the session of cross-operator application service." It is unclear if "a resource reservation request" of line 6 is associated or separate from previously claimed resource reservation requests of claim 20. It is unclear if "a resource release request" of line 13 is related to or independent of "a resource release request" in claim 19 from which claim 21 depends.

4. Claim 21 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 21 includes "the resource reservation request" in lines 5 and lines 11-12. It is unclear if these references are to the resource reservation request form an

application service media flow or the resource reservation request from a cross-operator application service media flow. The claim includes two instances of "the admission control decision result **(II. 8 and 14)**." It is unclear if these are independent results or if the claimed result has two possible sources for generating the result. Line 19 of the claim includes the acronym NGN which lacks antecedent basis and requires definition. Furthermore, lines 21-22 and 26 include the terms "the resource reservation request." It is unclear to which resource reservation request these references are made.

Claim Rejections - 35 USC § 103

5. Claims 1, 3, 5, 6 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) (US 2009/0116382 A1) in view of Chakravorty et al. "Dynamic SLA-Based QoS Control for Third Generation Wireless Networks: The CADENUS Extension", hereinafter "CUE".

Regarding claim 1, AAPA discloses a resource and admission control subsystem in a next generation network, comprising:

an Access Admission Control Function (A-ACF) **(i.e. Resource and Admission Control Subsystem (RACS))**, which is used to receive a resource reservation request from an application service media flow for the transport layer of the network, perform authentication and make admission control decision for the resource reservation request based on user profile, operation policy rules, and transport resource availability

(Para [0007], requested bandwidth), and control an Access Border Gateway Function (A-BGF) at the border between the access network and the core network in accordance with the admission control decision result **(Para [0004], under control of the RACS, the transport layer provides IP connectivity; Para [0007], lines 14-20, A-BGF is controlled by the service layer)**;

an Interconnection Admission Control Function (I-ACF) **(i.e. RACS)**, which is used to receive a resource reservation request from a cross-operator application service media flow for the transport layer of the network, perform authentication and make admission control decision for the resource reservation request based on user profile, operation policy rules, and transport resource availability **(Para [0007], requested bandwidth)**, and control an Interconnection Border Gateway Function (I-BGF) at the border between the core networks in accordance with the admission control decision result **(Para [0004], under control of the RACS, the transport layer provides IP connectivity; Para [0007], lines 14-20, I-BGF is controlled by the service layer)**;

a Gq interface **(Para [0010])**;

a Go interface **(Para [0010])**;

a G3 interface **(Para [0004]-[0005], RACS controls the transport layer, The BGF may interact with entities on the service layer; I-BGF is also disclosed, therefore there is an interface between the I-BGF and the service layer; Para [0006]; RACS must have interfaces to the transport layer)**;

wherein an application service control function in each NGN application service subsystem **(Para [0010] application function (AF))** interacts with the A-ACF via the

Gq interface, to send the resource reservation requirements of the application service media flow for the transport layer to the A-ACF through the resource reservation request **(Para [0007], requested bandwidth; Para [0010] PDF function is connected to the AF via the Gq interface)**;

the A-ACF **(i.e. PDF, while AAPA discusses the RACS and the PDF independently, it would have been obvious to one of ordinary skill in the art based on AAPA that the PDF is performing an admission control function like RACS)** controls the A-BGF **(i.e. TPF, as referenced above, the A-BGF exists in the traffic plane and it would have been obvious to one of ordinary skill in the art that the traffic plane function controlled by the PDF could be the A-BGF)** at the border between the access network and the core network via the Go interface **(Para [0010]; PDF is connected to the TPF via the Go interface)**, in accordance with the admission control decision result, to perform the functions of: gate opening or closing, the "gate" indicating packet filtering by IP address/port, packet marking for outbound traffic, bandwidth reservation and allocation for inbound/outbound traffic, IP address and port translation, policing of inbound traffic, packet filtering-based firewall, and measurement of usage, for the media flow **(Para [0005])**;

the I-ACF **(i.e. PDF while AAPA discusses the RACS and the PDF independently, it would have been obvious to one of ordinary skill in the art based on AAPA that the PDF is performing an admission control function like RACS)** controls the I-BGF at the border between the core networks via the G3 interface **(i.e. TPF , as referenced above, the A-BGF exists in the traffic plane and it would**

have been obvious to one of ordinary skill in the art that the traffic plane function controlled by the PDF could be the I-BGF), in accordance with the admission control decision result, to perform the functions of gate opening or closing, packet marking for outbound traffic, bandwidth reservation and allocation for inbound/outbound traffic, IP address and port translation, policing of inbound traffic, packet filtering-based firewall, and measurement of usage, for the media flow **(Para [0005])**.

AAPA mentions an interconnect border control function **(AAPA: Para [0003])** but does not disclose an Id interface or that an interconnection border control function (IBCF) interacts with the I-ACF via the Id interface, to send the resource reservation requirements of the cross-operator application service media flow for the transport layer to the I-ACF through the resource reservation request.

CUE teaches an IP BS Manager in a GGSN **(Fig. 2 IP BS Manager in the Gateway)** which receives UE application QoS requirements via request messages or RSVP control messages which are forwarded to the CUE-RM (i.e. I-ACF, which suggests an interface equivalent of the claimed Id interface which carries the forwarded requirements) which makes an admission control decision to accept or reject the user application QoS requirements **(pp. 941-942; A. Control Management in CUE and subsequent description)**. CUE discloses there is a need for implementing end-to-end QoS in a wired-wireless environment and the solutions presented in CUE are directed at providing end-to-end QoS control **(pg. 938, Section I. Introduction)**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the IP BS Manager as taught in CUE to forward QoS

requirements to an access control function of the core network, because CUE teaches that it is the responsibility of the UMTS to ensure QOS from the core network **(pg. 941 A. Control Management in Cue, and following paragraphs)** and CUE teaches this as a solution to the need for end-to-end QoS control in wired-wireless networks.

Regarding claim 3, AAPA teaches the RACS provides for checking resource availability **(Para [0007])**. While AAPA does not teach separate functionality for access control and resource control, the claimed functionality is not novel. Furthermore, it would have been merely a matter of obvious engineering design choice to make the functions of access control and resource control separable **(MPEP 2144.04 V)** and that doing so does not produce an unexpected result.

Regarding claim 5, AAPA teaches the user profiles can be stored in a remote location of the network **(Para [0007])**.

Regarding claim 6, AAPA teaches the functionality of the RACS includes Admission control and resource control functions. It would have been merely a matter of obvious engineering design choice to make these functions separable **(MPEP 2144.04 V)** and that doing so does not produce an unexpected result.

Regarding claim 21, AAPA discloses a resource and admission control subsystem in a next generation network, comprising:

an Access Admission Control Function (A-ACF) **(i.e. RACS)**, which is used to receive a resource reservation request from an application service media flow, perform authentication and make admission control decision for the resource reservation request based on user profile, operation policy rules, and transport resource availability

(Para [0007], requested bandwidth), and control an Access Border Gateway Function (A-BGF) between the access network and the core network in accordance with the admission control decision result **(Para [0004], under control of the RACS, the transport layer provides IP connectivity; Para [0007], lines 14-20, A-BGF is controlled by the service layer)**;

an Interconnection Admission Control Function (I-ACF) **(i.e. RACS)**, which is used to receive a resource reservation request from a cross-operator application service media flow, perform authentication and make admission control decision for the resource reservation request based on user profile, operation policy rules, and transport resource availability **(Para [0007], requested bandwidth)**, and control an Interconnection Border Gateway Function (I-BGF) between the core networks in accordance with the admission control decision result **(Para [0004], under control of the RACS, the transport layer provides IP connectivity; Para [0007], lines 14-20, I-BGF is controlled by the service layer)**;

a Gq interface **(Para [0010])**;

a Go interface **(Para [0010])**;

a G3 interface **(Para [0004]-[0005], RACS controls the transport layer, The BGF may interact with entities on the service layer; I-BGF is also disclosed, therefore there is an interface between the I-BGF and the service layer; Para [0006]; RACS must have interfaces to the transport layer)**;

wherein an application service control function in each NGN application service subsystem **(Para [0010] application function (AF))** interacts with the A-ACF via the

Gq interface, to send the resource reservation requirements of the application service media flow to the A-ACF through the resource reservation request **(Para [0007], requested bandwidth; Para [0010] PDF function is connected to the AF via the Gq interface)**;

the A-ACF **(i.e. PDF, while AAPA discusses the RACS and the PDF independently, it would have been obvious to one of ordinary skill in the art based on AAPA that the PDF is performing an admission control function like RACS)** controls the A-BGF **(i.e. TPF, as referenced above, the A-BGF exists in the traffic plane and it would have been obvious to one of ordinary skill in the art that the traffic plane function controlled by the PDF could be the A-BGF)** via the Go interface **(Para [0010]; PDF is connected to the TPF via the Go interface)**;

the I-ACF controls the I-BGF via the G3 interface **(i.e. PDF while AAPA discusses the RACS and the PDF independently, it would have been obvious to one of ordinary skill in the art based on AAPA that the PDF is performing an admission control function like RACS)** controls the I-BGF **(i.e. TPF , as referenced above, the A-BGF exists in the traffic plane and it would have been obvious to one of ordinary skill in the art that the traffic plane function controlled by the PDF could be the I-BGF)**.

AAPA mentions an interconnect border control function **(AAPA: Para [0003])** but does not disclose an Id interface or that an interconnection border control function (IBCF) sends the resource reservation requirements of the cross-operator application

service media flow to the I-ACF through the resource reservation request via the Id interface.

CUE teaches an IP BS Manager in a GGSN **(Fig. 2 IP BS Manager in the Gateway)** which receives UE application QoS requirements via request messages or RSVP control messages which are forwarded to the CUE-RM (i.e. I-ACF, which suggests an interface equivalent of the claimed Id interface which carries the forwarded requirements) which makes an admission control decision to accept or reject the user application QoS requirements **(pp. 941-942; A. Control Management in CUE and subsequent description)**. CUE discloses there is a need for implementing end-to-end QoS in a wired-wireless environment and the solutions presented in CUE are directed at providing end-to-end QoS control **(pg. 938, Section I. Introduction)**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the IP BS Manager as taught in CUE to forward QoS requirements to an access control function of the core network, because CUE teaches that it is the responsibility of the UMTS to ensure QOS from the core network **(pg. 941 A. Control Management in Cue, and following paragraphs)** and CUE teaches this as a solution to the need for end-to-end QoS control in wired-wireless networks.

6. Claims 4 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA in view of CUE, further in view of Bodin et al. (US 2006/0036719 A1), hereinafter "Bodin".

Regarding claim 4, AAPA in view of CUE fairly suggests claim 1, and teaches an interface between RACS **(AAPA: Fig. 2, Para [0008])**, however the references do not teach forwarding resource reservation requests between RACS for cross-operator application service media flows.

Bodin teaches a Network Resource Manager (NRM) **(Para [0007])** which exist in different operator networks **(Fig. 1, Para [0042])**. These NRMs communicate with each other to reserve resources in the different domains **(Para [0064])**. Bodin teaches there are strong commercial reasons for providing unified solutions to ensure QoS in IP networks **(Para [0005])**.

Given the known interface between RACS as shown in APAA and the teachings of Bodin, it would have been obvious to one of ordinary skill in the art at the time of the invention to communicate resource reservation requests between RACS via an communication interface interconnecting the RACS because the suggestion lies in Bodin that providing this intercommunication between resource managers provides a unified solution to providing QoS in IP networks.

Regarding claim 7, AAPA in view of CUE teaches claim 1 and suggests a plurality of resource control functions (RCFs) distributed among network domains **(AAPA: Para [0004]; Fig. 2, Para [0008])**. While CUE teaches a centralized resource control function **(Fig. 5, CUE-RM)**, the combination of references does not teach a coordination of a plurality of distributed RCFs.

Bodin teaches a Network Resource Manager (NRM) **(Para [0007])** which exist in different operator networks **(Fig. 1, Para [0042])**. These NRMs communicate with each

other to reserve resources in the different domains **(Para [0064])**. Bodin teaches there are strong commercial reasons for providing unified solutions to ensure QoS in IP networks **(Para [0005])**.

Given the known interface between RACS as shown in APAA and the teachings of Bodin, it would have been obvious to one of ordinary skill in the art at the time of the invention to coordinate a plurality of distributed RCFs because the suggestion lies in Bodin that providing this coordination between distributed RCFs provides a unified solution to providing QoS in IP networks.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Iwata (US 2002/0051449 A1) teaches resource coordination between networks to determine routes that support end-to-end QoS utilizing OSPF-TE and I-BGP protocols.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joey Bednash whose telephone number is (571)270-7500. The examiner can normally be reached on Mon-Fri 7:30 AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571)272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Joey Bednash/
Examiner, Art Unit 2461

/Jason E Mattis/
Primary Examiner, Art Unit 2461